THE JOURNAL

OF

BIOLOGICAL CHEMISTRY

FOUNDED BY CHRISTIAN A. HERTER AND SUSTAINED IN PART BY THE CHRISTIAN A. HERTER MEMORIAL FUND

EDITED BY

H. D. DAKIN, New York, N. Y.
E. K. DUNHAM, New York, N. Y.
LAFAYETTE B. MENDEL, New Haven, Conn.
A. N. RICHARDS, Philadelphia, Pa.
DONALD D. VAN SLYKE, New York, N. Y.

WITH THE COLLABORATION OF

J. J. ABEL, Baltimore, Md.
STANLEY R. BENEDICT, New York, N. Y.
R. H. CHITTENDEN, New Haven, Conn.
OTTO FOLIN, Boston, Mass.
WILLIAM J. GIES, New York, N. Y.
L. J. HENDERSON, Cambridge, Mass.
REID HUNT, Boston, Mass.
W. A. JACOBS, New York, N. Y.
WALTER JONES, Baltimore, Md.
ANDREW HUNTER, Toronto, Canada.
P. A. LEVENE, New York, N. Y.
JACQUES LOEB, New York, N. Y.
A. S. LOEVENHART, Madison, Wis.
GRAHAM LUSK, New York, N. Y.
E. V. McCOLLUM, Baltimore, Md.
A. B. MACALLUM, Toronto, Canada.
J. J. R. MACLEOD, Cleveland, Ohio.
JOHN A. MANDEL, New York, N. Y.
A. P. MATHEWS, Chicago, Ill.
F. G. NOVY, Ann Arbor, Mich.
THOMAS B. OSBORNE, New Haven, Conn.
T. BRAILSFORD ROBERTSON, Toronto, Canada.
P. A. SHAFFER, St. Louis, Mo.
A. E. TAYLOR, Philadelphia, Pa.
F. P. UNDERHILL, New Haven, Conn.
V. C. VAUGHAN, Ann Arbor, Mich.
ALFRED J. WAKEMAN, New Haven, Conn.

VOLUME XXXVII
BALTIMORE
1919

COPYRIGHT 1919
BY
THE JOURNAL OF BIOLOGICAL CHEMISTRY

PUBLISHED BY THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH FOR THE JOURNAL OF BIOLOGICAL CHEMISTRY, INC.

WAVERLY PRESS
THE WILLIAMS & WILKINS COMPANY
BALTIMORE, U. S. A.

CONTENTS TO VOLUME XXXVII.

No. 1, January, 1919.

Meigs, Edward B., Blatherwick, N. R., and Cary, C. A. Contributions to the physiology of phosphorus and calcium metabolism as related to milk secretion 1

Uyeno, Doko. The physical properties and chemical composition of human amniotic fluid 77

Hammett, Frederick S. Urea formation by the placenta 105

Sherwin, Carl P., Wolf, Max, and Wolf, William. The maximum production of glutamine by the human body as measured by the output of phenylacetylglutamine 113

Read, B. E. Behavior of Sudan III in the animal organism 121

Sumner, James B. The globulins of the jack bean, *Canavalia ensiformis*. Preliminary paper. Plate 1 137

Davidson, J. Do seedlings reduce nitrates? 143

Johns, Carl O., Finks, A. J., and Gersdorff, C. E. F. Globulin of the cocoanut, *Cocos nucifera*. I. Preparation of cocoanut globulin. Distribution of the basic nitrogen in cocoanut globulin. 149

McCollum, E. V., Simmonds, N., and Parsons, H. T. Supplementary relationships between the proteins of certain seeds 155

Krieble, Vernon K., and Bergeim, Olaf. Study of the metabolism in multiple exostoses 179

Osborne, Thomas B., and Mendel, Lafayette B. The vitamines in green foods 187

Daniels, Amy L., and McClurg, Nelle I. Influence of high temperatures and dilute alkalies on the antineuritic properties of foods 201

No. 2, February, 1919.

Morgan, Agnes Fay, and Heinz, Alice M. Biological values of wheat and almond nitrogen 215

Osborne, Thomas B., Mendel, Lafayette B., and Ferry, Edna L. A method of expressing numerically the growth-promoting value of proteins 223

Morris, J. Lucien. New titration method for the determination of uric acid in urine 231

Myers, Victor C., and Fine, Morris S. Comparative distribution of urea, creatinine, uric acid, and sugar in the blood and spinal fluid 239

338004

DENIS, W., and MINOT, A. S. Creatinuria and acidosis 245
GIVENS, MAURICE H., and MCCLUGAGE, HARRY B. The antiscorbutic property of vegetables. I. An experimental study of raw and dried tomatoes 253
PALMER, LEROY S., and SCOTT, ROBERT G. The physicochemical state of the proteins in cow's milk 271
VAN SLYKE, L. L., and BOSWORTH, A. W. The state of proteins in cow's milk 285
MCCOLLUM, E. V., SIMMONDS, N., and PARSONS, H. T. The dietary properties of the pea (*Vicia sativa*) 287
HASKINS, HOWARD D. Modifications of Benedict's and Folin's quantitative sugar methods 303
ROHDE, ALICE, and STOCKHOLM, MABEL. The increase in nitrogen metabolism of the dog, following the administration of desiccated thyroid gland 305
LAMB, ALVIN R., and EVVARD, JOHN M. The acid-base balance in animal nutrition. I. The effect of certain organic and mineral acids on the growth, well being, and reproduction of swine 317
LAMB, ALVIN R., and EVVARD, JOHN M. The acid-base balance in animal nutrition. II. Metabolism studies on the effect of certain organic and mineral acids on swine 329

No. 3, MARCH, 1919.

BURGE, W. E. The effect of acetone and of β-hydroxylbutyric and acetoacetic acids on the blood catalase 343
FOLIN, OTTO, DENIS, W., and MINOT, A. S. Lactose, fat, and protein in milk of various animals 349
DENIS, W., and MINOT, A. S. Methods for the quantitative determination of the non-protein nitrogenous constituents of milk 353
BREWSTER, J. F., and ALSBERG, C. L. Determination of the distribution of nitrogen in certain seeds 367
ECKSTEIN, H. C., and GRINDLEY, H. S. Reduction of the quantity of humin nitrogen formed in the hydrolysis of the nitrogenous constituents of feedingstuffs 373
ROBERTSON, T. BRAILSFORD, and RAY, L. A. Experimental studies on growth. X. The late growth and senescence of the normal white mouse, and the progressive alteration of the normal growth curve due to inbreeding 377
ROBERTSON, T. BRAILSFORD, and RAY, L. A. Experimental studies on growth. XI. The growth and senescence of white mice fed upon pituitary (anterior lobe) tissue, tethelin, egg lecithin, or cholesterol 393
ROBERTSON, T. BRAILSFORD, and RAY, L. A. Experimental studies on growth. XII. The influence of pituitary gland (anterior lobe) tissue, tethelin, egg lecithin, and cholesterol upon the duration of life of the white mouse 427

ROBERTSON, T. BRAILSFORD, and RAY, L. A. Experimental studies on growth. XIII. Lesions exhibited by normal, pituitary-, lecithin-, cholesterol-, and tethelin-fed white mice at the occurrence of natural death, with especial reference to the incidence and development of spontaneous cancer 443

ROBERTSON, T. BRAILSFORD, and RAY, L. A. Experimental studies on growth. XIV. Further experiments on the influence of tethelin upon the growth of the white mouse 455

NEWCOMER, H. S. Absorption spectra of acid hematin, oxyhemoglobin, and carbon monoxide hemoglobin. A new hemoglobinometer 465

No. 4, April 1919.

JOHNS, CARL O., FINKS, A. J., and PAUL, MABEL S. Studies in nutrition. I. The nutritive value of coconut globulin and coconut press cake 497

BENEDICT, STANLEY R. Note on the determination of blood sugar by the modified picric acid method 503

COWIE, DAVID MURRAY, and CALHOUN, HENRIETTA A. The presence of calcium in the red blood corpuscles of ox and man 505

CULLEN, GLENN E., and HUBBARD, ROGER S. Note on the stabilization of dilute sodium hypochlorite solutions (Dakin's solution). 511

CULLEN, GLENN E., and HUBBARD, ROGER S. Note on the electrolytic preparation of dilute sodium hypochlorite solutions (Dakin's solution) 519

FALK, K. GEORGE, BAUMANN, EMIL J., and MCGUIRE, GRACE. The chemical investigation of spoiled meat 525

FALK, K. GEORGE, and MCGUIRE, GRACE. Ammonia test for meat spoilage 547

VAN SLYKE, DONALD D., and DONLEAVY, JOHN J. A simplification of the McLean-Van Slyke method for determination of plasma chlorides 551

OSBORNE, THOMAS B., and MENDEL, LAFAYETTE B. The nutritive value of the wheat kernel and its milling products 557

Index to Volume XXXVII 603